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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,677	11/10/2003	Seth A. Lieffort	59361US002	4649
7590	12/01/2005		EXAMINER	
Melissa E. Buss Office of Intellectual Property Counsel 3M Center, Bldg. 220-11W-01 P.O. Box 33427 St. Paul, MN 55133-1000			TANG, SON M	
			ART UNIT	PAPER NUMBER
			2632	
			DATE MAILED: 12/01/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,677	LIEFFORT ET AL.	
	Examiner	Art Unit	
	Son M. Tang	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 June 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-27 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 7/13/05, 8/8/05.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 recites the limitation "the splitter" in line 1. There is insufficient antecedent basis for this limitation in the claim.
3. Claim 10 recites the limitation "the other one of the tag" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 11-12, 14-18, 21-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaltner [US 5,126,749] in view of Maimann et al. [US 4,635,041; Maimann].

Regarding claims 1-4 and 25: Kaltner discloses a system comprising:

-a plurality of radio frequency antennas (24, 26, 28, 30, 40, 42, 44, and 46) set up to provide one interrogation corridor, and

a RF reader inhered in the system which coupled to the plurality of antennas, the reader provides RF power to produce interrogation fields by (transmitter 10 and splitter 20) and receives input signals in response to at least one tag present within the interrogation fields by (receiver 12

and combiner 22), Kaltner does not specifically disclose a transmitter and a receiver having a port that provides each of the antennas with RF power. **Maimann** teaches a theft protection system comprising a plurality of antennas (S, M) set up to provide one or more interrogation corridors met by exit passages (2-4), and also teaches that the transmitter antenna and receiver antenna (S, M) can be modified as a single transmitter/receiver (transceiver) antenna system, which is functioning as transmitting and receiving antenna [see col. 2, lines 55-59], in the result of the transceiver modification above the associate components (splitter and combiner) of Kaltner or (Rec. Mux and Trans Mux) of Maimann can be combined in a single device, and only one port or connector is required to connect from the splitter/combiner unit to the reader. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to modify the transceiver antenna as taught by Maimann into the system of Kaltner, for the benefit of less labor cost for installing transmitter and receiver on both side of the corridor, while transceiver requires only one side of corridor.

Regarding claim 5: Kaltner and Maimann disclose all the limitations as described above, Kaltner further discloses that individual receive signals from the individual loop circuits (antennas) be summed in series and fed to a signal processor [see col. 5, lines 1-4], which constitutes of a weak input signal from one of the antennas is combined with a weak input signal from other antenna to increase the likelihood of detecting a tag in the corridor as claimed.

Regarding claims 6-8: Kaltner and Maimann disclose all the limitations as described above, Maimann further teaches that the interrogation corridors are located near the exit of a protected area such as shop area, col. 1, lines 6-19, said reader generates a tag detection signal to indicate at an output alarm (A) col. 2, lines 45-53.

Regarding claim 11: Kaltner and Maimann disclose all the limitations as described above, Kaltner further discloses that the antennas are driven so that one-half the effective total loop area is in one phase and the other haft is 180 out of phase [as shown in Fig. 2, col. 4, lines 32-36], which constitutes of each antenna receives out of phase RF power with its neighboring antennas.

Regarding claim 12: Kaltner and Maimann disclose all the limitations as described in claim 11 above, except for not specifically disclose that antennas has a 90-degree phase difference from the RF power delivered to a neighboring one of the antennas. Since, Kaltner had stated that said antennas are driven independently of the others and infinite adjustability of the current in each antenna [see col. 4, lines 40-52]. Therefore, it would have been obvious of one having ordinary skill in the art at the time of the claimed invention to recognize that any appropriate antenna phase angle would be adjustable to optimize the detection patterns, including 90-degree phase as claimed.

Regarding claim 14: Kaltner and Maimann disclose all the limitations as described above in claim 1 above, wherein the splitter/combiner (20, 22) is inherently of providing RF power signal to antennas, and accepting any detected signal from the antennas simultaneously.

Regarding claims 15-18 and 21-23: The claimed method steps are interpreted and rejected as rejection stated above.

6. Claims 9-10 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaltner in view of Maimann et al. in claim 1 above, and further in view of Lizzi et al. [US 5,030,941; Lizzi].

Regarding claims 9-10 and 19-20: Kaltner and Maimann disclose all the limitations as described above, except for not specifically teach that a plurality of sensors to detect a patron and a tag within any of said interrogation corridors. **Lizzi** teaches an electronic article surveillance (tag) system in conjunction with sensor (8) for detecting shopper (patron) presence at EAS interrogation corridor (1) [as shown in Fig. 1, col. 4, lines 31-38], wherein an alarm generates when an active tag and a person present at corridor (1) for a period of time (met by counters 11 and 18) [see col. 5, lines 54-65]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to employ a patron sensor in conjunction with tag interrogator as taught by Lizzi into the system of combination above, for the benefit of enhancing an accurate detection and preventing false alarm.

7. Claims **13 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaltner in view of Maimann et al. in claim above, and further in view of Durec et al. [US 6,487,395; Durec].

Regarding to claims 13 and 24: Kaltner and the combination disclose all the limitation as described above, but lack in specifically teach that said 90-degree phase difference is provided using quarter wavelength transmission lines, Durec teaches a concept to produce 90-degree difference (out of phase) by using quarter-wavelength transmission line [col. 2, lines 3-10 and col. 3, lines 9-12]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention, to use a known quarter wavelength transmission line method as taught by Durec into the combination above, for the benefit of accurate and better signal quality.

8. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maimann et al. in view of Lizzi et al..

Regarding claims 26-27: Maimann et al. disclose a control unit (9) which includes a computer-readable medium comprising instructions that cause a processor to:
-receive from a single reader a tag detection signal that indicates at least one tag is present with any of a plurality of interrogation corridors (2-4) see Fig. 1, col. 3, lines 2-14], Maimann et al. fail to disclose a patron signal that indicates patron is present within any of the interrogation corridors, and output an alarm signal upon receiving the tag detection and the patron detection within a time period. **Lizzi** teaches an electronic article surveillance (tag) system in conjunction with sensor (8) for detecting shopper (patron) presence at EAS interrogation corridor (1) [as shown in Fig. 1, col. 4, lines 31-38], wherein an alarm generates when an active tag and a person present at corridor (1) for a period of time (met by counters 11 and 18) [see col. 5, lines 54-65]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to employ a patron sensor in conjunction with tag interrogator as taught by Lizzi into the system of combination above, for the benefit of enhancing an accurate detection and preventing false alarm.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goff et al. [US 6,335,686] and Hatano et al. [US 6,069,564].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son M. Tang whose telephone number is (571)272-2962. The examiner can normally be reached on 4/9 First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571)272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Son Tang


BENJAMIN C. LEE
PRIMARY EXAMINER